Emma Strauss Kranich

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY ***Expected May 2022***
GPA: 4.1 (out of 4.3), *Candidate for Bachelor of Science in Electrical and Computer Engineering with Minor in Biomedical Engineering*
Honors: Dean's List
Courses: Signals and Information, Microelectronics, Embedded Systems, Introduction to Neuroscience

Bethlehem Central High School, Delmar, NY ***Graduated June 2018***
GPA: 97 (unweighted), **SAT:** 1580, **ACT:** 35
Honors: Art Honor Society, Math Honor Society, National Honor Society
Awards: National Merit Finalist, University of Rochester Bausch + Lomb Award, New York State Scholarship for Academic Excellence

PROFESSIONAL EXPERIENCE

Battelle Memorial Institute, Columbus, OH ***June 2020 – August 2020***
Electrical Engineering Intern for Medical Devices Group

- Worked with NeuroLife team on neural bypass technology allowing paralyzed patients conscious control of fingers and hand
- Simulated in LTspice, built, then tested breadboards for new prototype that can both stimulate the arm and record EMG data
- Devised testing procedure and MATLAB analysis for electret property of masks in the CCDS mask decontamination system

Erickson Lab, Cornell University ***January 2019 – January 2020***
Research Assistant

- Designed and created new medical devices integrating H.E.R.M.E.S device for blood-plasma separation at the point-of-need
- Developed ways to utilize PCR without the need to separate further particles out of erythrocyte depleted blood
- Engineered solution for the transport of blood samples that maintains analyte concentrations

International Genetically Engineered Machine (iGEM) Team, Cornell University ***October 2018 – Present***
Product Development Lead

- Generated CAD and determined theoretical limits for hand-held body fluorescence scanner to detect cancer therapeutic that travels with metastasized tumors (2020 project)
- Built boat with automatic sampling system (given GPS locations); constructed bioreactor to remove toxins if found (2019 project)
- Lead PD team to design and manufacture products throughout school year and summer; compete at annual iGEM competition

Neural Stem Cell Institute, Rensselaer, NY ***May 2017 – August 2017***
Neuroscience Intern

- Assisted lab staff in developing regenerative stem cell therapies for diseases of the central nervous system
- Improved experience with lab techniques such as staining, microscopy, gel electrophoresis, feeding cells, and cleaning cells

Muhlenberg Brain Camp, Muhlenberg College, PA ***July 2017 – July 2017***
Research Assistant

- Selected for free week-long program; conducted research with a professor on memory consolidation and PTSD
- Utilized VR to demonstrate that memories can be hidden from retrieval by using a visuospatial distractor during consolidation
- Research picked up by Muhlenberg students to test after preparing poster presentation and speaking at symposium

EXTRACURRICULAR

Theta Tau Professional Engineering Fraternity ***January 2019 – Present***
Philanthropy Chair

- Underwent eight-week new member education training that focused on professional development and leadership skills
- Organize philanthropy events for fraternity to participate in, totaling to 130 hours last full semester (Fall 2019)
- Engage with peers in workshops such as resume critiques and mock interviews

Society of Women Engineers (SWE) ***September 2018 – Present***
Alumni Relations Committee Member

- Establish database for student-alumni connections, create mentor-mentee matches based on professional interests
- Meet to discuss opportunities for professional development as well as foster relationships among fellow students

Fibrodysplasia Ossificans Progressiva (FOP) Charity Events **October *2015 – March 2017***

- Orchestrated logistics for two charity events (2015 Awake for a Cure and 2017 Cheers for a Cure) for FOP research
- Raised $76,000 for international FOP research center at the University of Pennsylvania

Other Involvements ***September 2014 – Present***

- **TA/Tutoring** Digital Logic and Computer Organization Teaching Assistant (Spring 2020), Calculus and Chemistry peer tutor, help students review class material and complete problem sets, supervise and assist during labs
- **Athletics** Theta Tau Intramural Chair (Fall 2019), Bethlehem Central High School Freshman and JV soccer captain
- **Music** Received 94 on most recent piano NYSSMA (Level 6), BCHS Wind Ensemble and Jazz Band first chair saxophone

SKILLS AND INTERESTS

Technical: Circuit Design/Analysis, Arduino, LTspice, MATLAB, Python, Java, Verilog, Oscilloscopes, CAD (basic), HTML (basic)
Interests: Hiking, Running, Painting, Skiing, Baking, Traveling, Sudoku, Piano, Soccer, Poetry, Neuroscience